



Study Guide

SURGERY
Final Year MBBS



UNIVERSITY MEDICAL
& DENTAL COLLEGE



Table of Contents



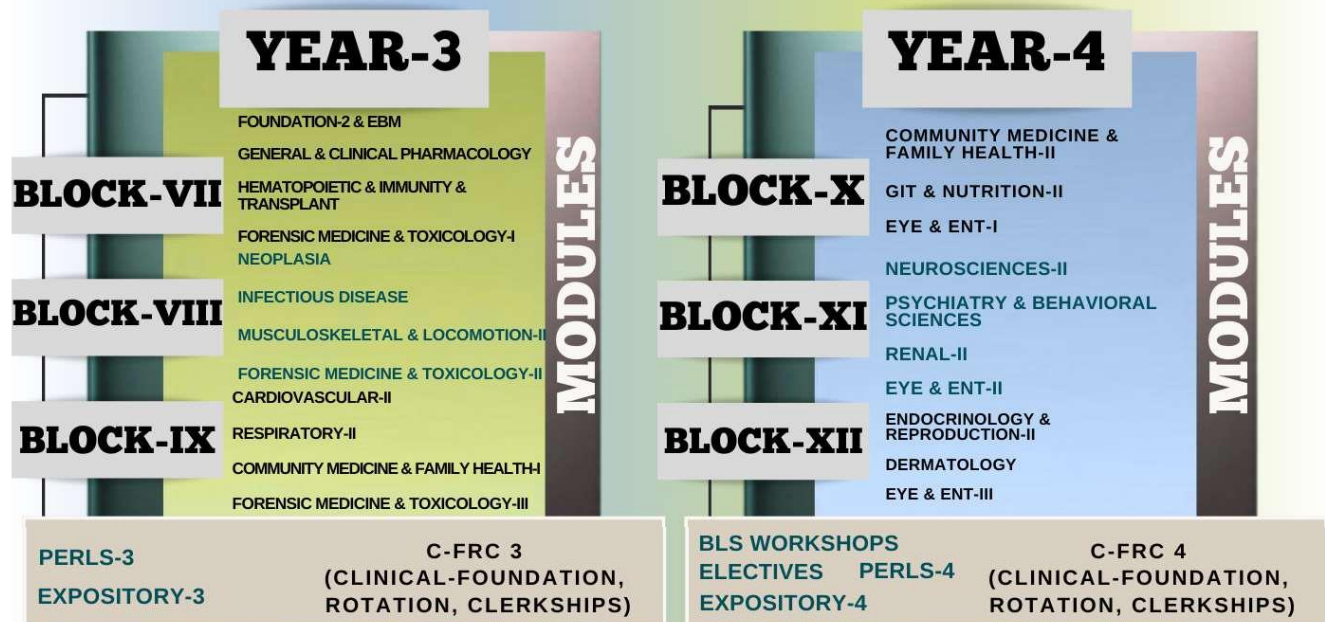
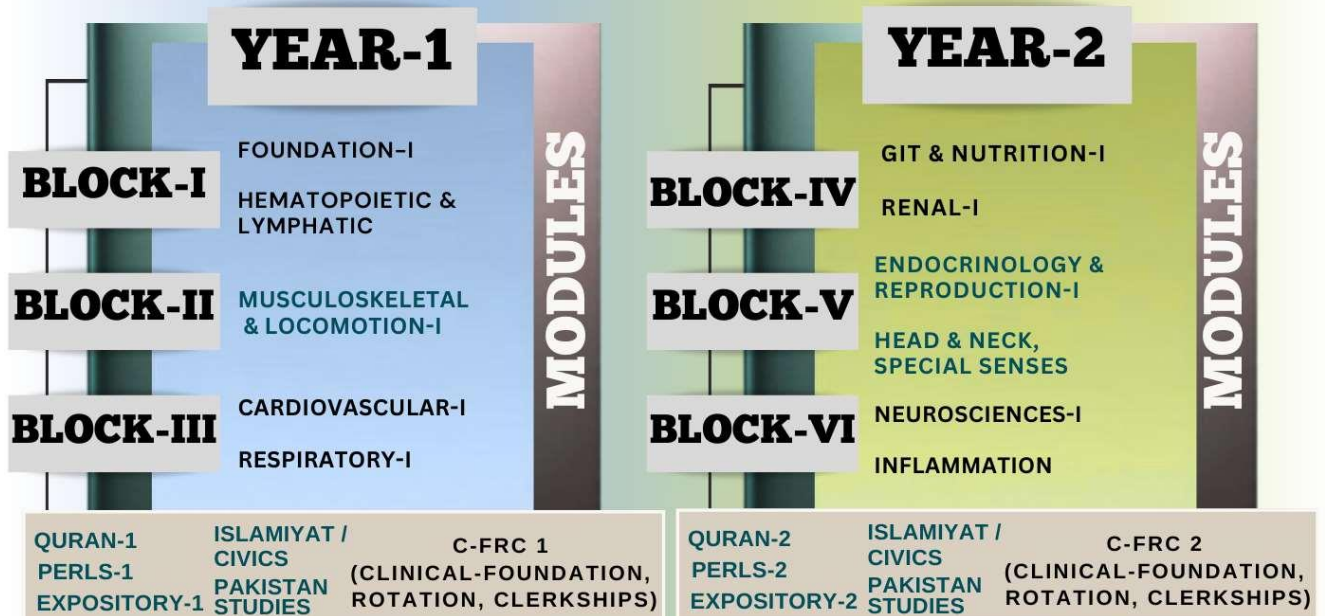
Table of Contents

| Section | Content |
|---------|----------------------|
| 1 | Curriculum Framework |
| 2 | Clerkship Framework |
| 3 | Surgery Study Guide |

01

Section

Modular Integrated Curriculum 2K23 Framework





02



Section

Final Year MBBS

Clerkship

Framework

| BLOCK A (16 weeks) | | BLOCK B (16 weeks) | |
|--|--|--|---|
| Classroom teaching (16 weeks) | Medicine Clinical Rotation (6 weeks) | Classroom teaching (16 weeks) | Surgery Clinical Rotation (6 weeks) |
| | End Clinical Rotation Exam (Medicine) | | End Clinical Rotation Exam (Surgery) |
| | Subspecialties Rotations <i>*(Any three of sub-specialties: Neurology, Endocrinology, Rheumatology, Geriatrics, Paediatric Cardiology)</i> (4 weeks) | | Subspecialties Rotations <i>*(Any three of the sub-specialties: Urology, Neurosurgery, Thoracic Surgery, Paediatric Surgery, Plastic Surgery, Vascular Surgery)</i> (4 weeks) |
| | End Clinical Rotation Exam (Subspecialties Rotations) | | End Clinical Rotation Exam (Subspecialties Rotations) |
| | Paediatrics Clinical Rotation (6 weeks) | | Gynecology & Obstetrics Clinical Rotation (6 weeks) |
| | End Clinical Rotation Exam (Paediatrics) | | End Clinical Rotation Exam (Gynecology & Obstetrics) |
| | Block A Exam Theory | | Block B Exam Theory |

**Reference: PM&DC guidelines for undergraduate Medical Education (MBBS 2024 page 19-20)*

Note:

- Under the final year MBBS clerkship model, each student is required to undertake at least three full-day rotations per week (from 8:00 AM to

8:00 PM) in the relevant clinical department.

- It is mandatory for every student to bring a complete, duly signed, and stamped clinical logbook, with end-rotation clinical examination results properly attached, to the annual examination of the relevant specialty.
- The Internal block theory and clinical examinations will be conducted in accordance with the format specified in the Annual Examination Table of Specifications (TOS).

BLOCK A

MEDICINE & ALLIED

| Subject | Weeks |
|---|----------|
| GENERAL MEDICINE <ul style="list-style-type: none">• Infectious diseases• Liver and pancreatic diseases• Hematologic diseases• Water, electrolyte, acid base balance• Psychiatry• Emergency Medicine• Dermatology• Cardiology• Pulmonology• Nephrology• Gastroenterology• Oncology• Neurology• Endocrinology• Rheumatology | 10 Weeks |
| PEADIATRICS | 06 Weeks |

BLOCK B

SURGERY & ALLIED

| Subject | Weeks |
|---|----------|
| GENERAL SURGERY <ul style="list-style-type: none">• Metabolic response to injury• Wound healing• Surgical infections• Pre and post-operative investigations & assessment• Post-operative care• Vascular surgery• Acid base balance• Laparoscopic and robotic surgery principles• Head, face, and neck• Breast surgery• Thoracic surgery• Abdominal surgery• Surgical ethics• Anesthesia• Orthopedics and trauma• Urology• Paediatric surgery• Plastic surgery | 10 Weeks |
| GYNAECOLOGY & OBSTETRICS | 06 Weeks |

03

Section

SURGERY CLERKSHIP

SURGERY CLERKSHIP

Learning Outcomes

By the end of the Surgery clerkship, a student will be able to:

- Identify life-threatening surgical emergencies such as trauma, intestinal obstruction, perforation, and hemorrhage, and initiate prompt resuscitation and referral.
- Take focused surgical histories, perform thorough physical examinations (including system-specific exams), and interpret bedside findings accurately.
- Interpret essential laboratory, radiological, and endoscopic investigations relevant to surgical diseases.
- Practice ethical principles, use informed consent processes, maintain confidentiality, and follow safety checklists to ensure patient safety in clinical and operative settings.
- Participate in preoperative preparation, intraoperative assistance, and postoperative care, including fluid management, pain control, infection prevention, and recognition of complications.
- Communicate effectively with patients, families, and healthcare teams, and contribute to multidisciplinary decision-making.
- Identify human factors in surgical errors, report adverse events appropriately, and contribute to clinical audit and quality improvement processes.
- Demonstrate accountability, engage in self-directed learning, and reflect on clinical experiences to prepare for safe, independent practice.



**MBBS
Final Year**

SURGERY-I

General Principles of Surgery

**ACADEMIC
YEAR 2025-2026**

PREOPERATIVE ASSESSMENT OF SURGICAL PATIENT

Theory

| Sr.No. | Topic | Clinical Methods/Skills |
|--------|--|--|
| S1-001 | Pre-operative evaluation | <ul style="list-style-type: none"> • Discuss the steps of preoperative history-taking, physical examination, and baseline investigations in surgical patients • Explain the evaluation and optimization of patients with cardiovascular, neurological, respiratory, gastrointestinal, hepatic and renal, neurological, endocrine and metabolic disorders, including malnutrition, obesity, diabetes, and thyroid dysfunction in the preoperative settings. |
| S1-002 | Pre-operative investigations | <ul style="list-style-type: none"> • Enlist the pre-operative investigations. • Interpret common abnormalities in lab reports relevant to surgical patients. • Explain the role of blood glucose monitoring in ensuring perioperative safety. • Interpret ECG and chest X-ray in surgical patients. |
| S1-003 | High-risk patient | <ul style="list-style-type: none"> • Describe risk stratification tools in surgery, including POSSUM, RCRI, and ACS-NSQIP, and their role in predicting perioperative morbidity and mortality |
| S1-004 | Optimization | <ul style="list-style-type: none"> • Discuss strategies to reduce perioperative morbidity and mortality in high-risk surgical patients. |
| S1-005 | Consent for surgery (<i>integrate with Forensic Medicine</i>) | <ul style="list-style-type: none"> • Explain the process of taking informed consent in surgical practice and its medico-legal significance. |

Clinical Skills

| Sr.No. | Topic | Clinical Methods/Skills |
|--------|--------------------------|---|
| S1-006 | Pre-operative evaluation | <ul style="list-style-type: none"> • Take pre-operative history. • Perform systemic examination. • Record and interpret ECG in a patient. • Assist in obtaining arterial blood gases and interpreting |

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| | | <p>results.</p> <ul style="list-style-type: none"> • Counsel patients for necessary investigations • Assess airway and anesthetic risk. • Calculate ASA grade and surgical risk scores. • Communicate patients/families for informed consent. • Document comorbidities and prior surgical history. • Identify and refer high-risk patients for specialist optimization. • Follow OT protocols for patient preparation (e.g., fasting, medications, marking surgical site). |
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POSTOPERATIVE CARE

Theory

| Sr.No. | Topic | Clinical Methods/Skills |
|--------|-----------------------------|---|
| S1-007 | Immediate recovery care | <ul style="list-style-type: none"> • Describe monitoring standards in post-anesthesia care unit (PACU). • Describe the role of nurses, physiotherapists, and ICU team in post-op care. • Explain the use of repeat labs and imaging to detect complications early. |
| S1-008 | Postoperative complications | <ul style="list-style-type: none"> • List common respiratory, cardiac, renal, and neurological complications encountered during postoperative care. • Describe strategies for prevention and immediate management of postoperative complications. |
| S1-009 | Post-operative wound care | <ul style="list-style-type: none"> • Outline wound assessment, steps of wound dressing, and infection control in post-operative care. |

Clinical Skills

| Sr.No. | Topic | Clinical Methods/Skills |
|--------|---------------------------|---|
| S1-010 | Post-operative Care & ICU | <ul style="list-style-type: none"> • Monitor vital signs and fluid balance post-surgery. • Assess post-op airway and breathing of a patient. • Examine the surgical wounds. |

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| | | <ul style="list-style-type: none"> • Identify and assist in immediate management of hemorrhage, shock, DVT, PE. • Apply wound dressings. • Remove drains/catheters under supervision. • Counsel patient and relatives regarding complications and progress. • Follow ICU and OT protocols in the post-op setting. |
|--|--|---|

NUTRITION, FLUID, ELECTROLYTE AND ACID-BASE BALANCE

Theory

| Sr.No. | Topics | Specific Learning Objectives |
|--------|-----------------------------------|---|
| S1-011 | Malnutrition in surgical patients | <ul style="list-style-type: none"> • Enlist the causes of malnutrition in surgical patients. • Describe the consequences of malnutrition in surgical patients. • Identify the risk groups prone to malnutrition. |
| S1-012 | Nutritional assessment | <ul style="list-style-type: none"> • Explain the role of BMI in assessing nutritional status and surgical risk. • Describe the use of anthropometric measurements in evaluating malnutrition in surgical patients. • Explain the significance of serum proteins in predicting surgical outcomes. • Describe key clinical indicators of malnutrition relevant to perioperative assessment. |
| S1-013 | Nutritional support | <ul style="list-style-type: none"> • Compare enteral vs. parenteral nutrition. • Describe complications. |
| S1-014 | Fluid & electrolytes | <ul style="list-style-type: none"> • Describe the body fluid compartments and their relevance in surgical patients. • Explain the daily fluid and electrolyte requirements in the perioperative period. • Identify and describe insensible fluid losses and their significance in surgical management. |
| S1-015 | Perioperative fluid | <ul style="list-style-type: none"> • Explain maintenance versus replacement fluid therapy and |

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| | management | <p>their roles in perioperative fluid management.</p> <ul style="list-style-type: none"> Describe the differences between crystalloids and colloids and their appropriate use in surgical patients. |
| S1-016 | Acid-base balance | <ul style="list-style-type: none"> Identify the types of acid-base disorders seen in surgical patients. Interpret arterial blood gas (ABG) results to identify the underlying disturbance. Describe the basic management principles for correcting acid-base imbalances in the perioperative setting. |

Clinical Skills

| Sr.No. | Topics | Clinical Methods/Skills |
|--------|--------------------|--|
| S1-017 | Perioperative Care | <ul style="list-style-type: none"> Perform nutritional assessment at bedside (BMI, mid-arm circumference, skin fold). Calculate fluid and electrolyte requirements. Observe/assist in setting up IV fluids correctly and monitor input/output. Identify signs of dehydration, fluid overload, and electrolyte imbalance. Interpret serum electrolyte abnormalities and their clinical significance in surgical patients. Observe/assist in collection and interpretation of arterial blood gases (ABG). Counsel patient/family about nutritional support and risks. |

SHOCK, HEMMORRHAGE, AND WOUND

Theory

| Sr.No. | Topics | Specific Learning Objectives |
|--------|------------------------------|--|
| S1-018 | Metabolic response to injury | <ul style="list-style-type: none"> Define homeostasis. List the mediators of response and describe their actions. Describe “ebb & flow” phases. |

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| S1-019 | Shock | <ul style="list-style-type: none"> • Classify types of shock. • Discuss cardiovascular and metabolic features of shock. • Identify the signs of severity. • Outline principles of IV fluid replacement, blood, and blood component therapy. |
| S1-020 | Blood transfusion (See Annexure-I) | <ul style="list-style-type: none"> • Classify hemorrhage. • List the indications for blood transfusion. • Describe transfusion reactions and management. • Identify avoidable factors that worsen injury response. • Describe the hazards of massive transfusion. |
| S1-021 | Wound management | <ul style="list-style-type: none"> • Describe the steps of acute wound care. • Describe different types of dressings and their indications based on wound characteristics. • Explain chronic wound management. • Describe the rationale and indications for contracture release and strategies to prevent recurrence. |
| S1-022 | Compartment syndrome | <ul style="list-style-type: none"> • Explain the pathophysiology of compartment syndrome. • Identify the clinical features. • Describe the surgical management, including indications for and steps of fasciotomy. • Identify early warning signs to prevent irreversible tissue damage. • Describe postoperative care and monitoring after fasciotomy. |

Clinical Skills

| Sr.No. | Topic | Clinical Methods/Skills |
|--------|--|---|
| S1-023 | Critical Care Skills in Shock Management | <ul style="list-style-type: none"> • Perform clinical assessment of patient in shock (airway, breathing, circulation). • Record vital signs, urine output, and fluid balance charting. • Monitor IV fluids, central lines, and blood transfusion. • Identify signs of transfusion reaction and observe/assist in initiating the immediate management. • Counsel patient/family regarding consent for blood |

| | | transfusion. <ul style="list-style-type: none"> • Follow OT and ICU protocols for perioperative resuscitation. |
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| SURGICAL INFECTIONS | | |
| Theory | | |
| Sr.No. | Topics | Specific Learning Objectives |
| S1-024 | Risk factors and sources | <ul style="list-style-type: none"> • Describe causative organisms, endogenous and exogenous sources leading to surgical infections. • Explain host and procedural factors influencing infection risk. |
| S1-025 | Surgical site infections (SSI) | <ul style="list-style-type: none"> • Define SSI • Differentiate major vs. minor infections • Discuss “decisive period.” |
| S1-026 | Specific wound infections | <ul style="list-style-type: none"> • Describe gas gangrene, necrotizing fasciitis, cellulitis with their management. |
| S1-027 | Systemic infections | <ul style="list-style-type: none"> • Define bacteremia and describe its clinical significance and laboratory investigations. • Explain septicemia, its pathophysiology, clinical features, and potential complications. • Identify the criteria for SIRS and differentiate it from infectious and non-infectious causes. • Define sepsis, identify its clinical manifestations, and explain its progression from infection to organ dysfunction. |
| S1-028 | Viral infections in surgery | <ul style="list-style-type: none"> • Describe the transmission routes of HIV in surgical settings and outline standard precautions to prevent infection. • Describe the transmission routes of Hepatitis B and C in surgical settings and outline standard precautions to prevent infection. |
| S1-029 | Hospital-acquired & tropical infections | <ul style="list-style-type: none"> • Identify the clinical features, diagnostic methods, and surgical relevance of tuberculosis in abdominal and other organ involvement. • Describe the clinical manifestations, complications, and surgical considerations of typhoid infection, amoebiasis, |

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| | | ascariasis, and hydatid disease. |
| S1-030 | Prevention & treatment | <ul style="list-style-type: none"> • Discuss the aseptic techniques and protocols in surgical and clinical procedures to prevent infection. • Explain the principles and indications of antimicrobial prophylaxis in surgery. • Demonstrate rational use of antibiotics, including selection, dosing, and duration, to prevent resistance and optimize patient outcomes. |

Clinical Skills

| Sr.No. | Topics | Clinical Methods/Skills |
|--------|---|---|
| S1-031 | Infection control and management of infected wounds | <ul style="list-style-type: none"> • Examine wound for signs of infection. • Collect wound swab/aspirate for culture & sensitivity. • Observe/assist in wound debridement and abscess drainage. • Follow protocols for safe handling of infected material and proper specimen labeling. • Counsel and take consent from patients regarding HIV/Hepatitis testing. • Follow infection control measures in OT and ICU including hand hygiene, PPE, sterilization. |

PRINCIPLES OF ANESTHESIA AND ANALGESIA

Theory

| Sr.No. | Topics | Specific Learning Objectives |
|--------|---------------------|---|
| S1-032 | General Anesthesia | <ul style="list-style-type: none"> • Enlist the indications. • Describe the phases of general anesthesia. • Explain airway management during general anesthesia. • Discuss principles of muscle relaxation and artificial ventilation during general anesthesia. • Identify the causes of failure to awake after anesthesia. • Discuss the complications with their management. |
| S1-033 | Regional Anesthesia | <ul style="list-style-type: none"> • Classify the types of regional anesthesia with indications. |

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| | | <ul style="list-style-type: none"> Identify the contraindications to spinal/epidural anesthesia. Differential between spinal and epidural anesthesia. Describe complications and their management. |
| S1-034 | Pain Management | <ul style="list-style-type: none"> Identify the methods of acute pain relief. Enlist the causes of chronic pain. Describe principles of chronic pain management. |
| S1-035 | ICU Monitoring and Care | <ul style="list-style-type: none"> Discuss indications for ICU admission. Explain basic ICU monitoring. Describe principles of ICU care. |

Clinical Skills

| Sr.No. | Topics | Clinical Methods/Skills |
|--------|--|--|
| S1-036 | Patient preparation and anesthesia fitness | <ul style="list-style-type: none"> Interpret relevant investigation reports for anesthesia fitness (under supervision). Observe/assist in preparing patient for general anesthesia. Observe/assist in mask ventilation and endotracheal intubation Identify landmarks for spinal or epidural anesthesia. |

PRINCIPLES OF RADIOLOGY

Theory & Clinical Skills

| Sr.No. | Topics | Specific Learning Objectives |
|--------|-----------------|---|
| S1-037 | Chest X-ray | <ul style="list-style-type: none"> Identify normal chest anatomy and standard projections. Identify radiological features of pneumothorax, pneumonia, pleural effusion, cardiomegaly, pulmonary oedema, fractures, surgical emphysema, neoplastic disease, and chronic inflammatory conditions. |
| S1-038 | Skull X-ray | <ul style="list-style-type: none"> Identify normal skull anatomy and projections. Identify fractures, lytic and sclerotic lesions, calcifications, pituitary fossa abnormalities, and paranasal sinus pathology. |
| S1-039 | Abdominal X-ray | <ul style="list-style-type: none"> Identify normal abdominal anatomy and projections. Detect renal and urinary tract stones, gallstones, and other calcifications. |

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| | | <ul style="list-style-type: none"> Identify free gas under the diaphragm indicating perforation. Identify radiological signs of hepatomegaly and splenomegaly. |
| S1-040 | Spine X-ray | <ul style="list-style-type: none"> Identify normal spinal anatomy and projections. Identify disc space reduction and vertebral collapse. |
| S1-041 | Barium Studies | <ul style="list-style-type: none"> Identify normal anatomy and projections on barium meal and double-contrast studies. Interpret radiological features of gastric outlet obstruction, filling defects, stomach masses, esophageal varices and strictures. Identify intussusception, colonic defects, malabsorption patterns, strictures, ulcerative colitis, and ulcers. |
| S1-042 | Specialized Imaging | <ul style="list-style-type: none"> Identify hydronephrosis and renal masses on Intravenous Urogram (IVU). Identify vesicoureteric reflux on Micturating Cystourethrogram (MCU). Identify gall bladder diseases and gallstones on Cholecystogram. |
| S1-043 | Advanced Imaging | <ul style="list-style-type: none"> Interpret basic echocardiography reports. Interpret basic CT scan reports relevant to common clinical conditions. Describe the basic principles of MRI and interpret simple MRI reports. |

BURN INJURIES

Theory

| Sr.No. | Topics | Specific Learning Objectives |
|--------|--|--|
| S1-044 | Assessment and Management of Burn Injuries | <ul style="list-style-type: none"> Define burn injury and classify burns according to cause and depth. Describe the pathophysiology of burn injuries. Explain assessment of burn patients, including severity and extent of burns. Describe the Rule of Nines for estimation of total body surface |

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|--|--|---|
| | | <p>area (TBSA) involved in burns.</p> <ul style="list-style-type: none"> • Discuss initial management of burn injuries. • Explain principles of fluid resuscitation in burn patients. • Describe local wound management in burns. • Identify complications of burn injuries. • Explain basic principles of rehabilitation and prevention of burn injuries. |
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Clinical Skills

| Sr.No. | Topic | Clinical Methods/Skills |
|--------|-----------------|---|
| S1-045 | Burn management | <p>Observe/assist in:</p> <ul style="list-style-type: none"> • initial burn care, including airway support and oxygen administration. • fluid resuscitation for burn patients under supervision. • wound cleaning and dressing of burn injuries using aseptic technique. • monitoring vital signs and urine output in burn patients. |

RECONSTRUCTIVE AND PLASTIC SURGERY

Theory

| Sr.No. | Topics | Specific Learning Objectives |
|--------|---------------------------|--|
| S1-046 | Basics of Plastic Surgery | <ul style="list-style-type: none"> • Describe the basic anatomy and physiology of tissues used in reconstruction. • Explain principles of wound healing relevant to reconstructive surgery. • Describe the types of grafts used in surgery and discuss their clinical uses. • Explain the types of flaps used in reconstructive surgery and discuss their indications. • Discuss the role of plastic and reconstructive surgery in the management of difficult and complex tissue loss. |

PRINCIPLES OF LAPAROSCOPIC AND ROBOTIC SURGERY

Theory

| Sr.No. | Topics | Specific Learning Objectives |
|--------|----------------------------|--|
| S1-047 | Minimally Invasive Surgery | <ul style="list-style-type: none"> Describe the physics of pneumoperitoneum in laparoscopic surgery. Compare laparoscopy and robotic surgery with open surgery regarding technique, benefits, and outcomes. Enlist the common intraoperative risks in minimally invasive surgery. Identify common procedures suitable for laparoscopic and robotic approaches. Explain the principles of postoperative care in surgical patients. Describe the benefits of early mobilization, effective pain management, and strategies to achieve faster recovery. |

Clinical Skills

| Sr.No. | Topic | Clinical Methods/Skills |
|--------|----------------------------|---|
| S1-048 | Minimally Invasive Surgery | <ul style="list-style-type: none"> Assist in laparoscopic procedures (camera holding, basic instrument handling). Identify and assist in safe handling of laparoscopic ports, trocars, and robotic arms. Observe setting up laparoscopic tower (light source, insufflator, camera). Counsel a patient about minimally invasive vs. open approach and take consent. |

SURGICAL ETHICS & PATIENT SAFETY

Theory

| Sr.No. | Topics | Specific Learning Objectives |
|--------|-----------------|---|
| S1-049 | Surgical ethics | <ul style="list-style-type: none"> Describe the process and importance of obtaining informed consent in surgical practice. Discuss the significance of confidentiality in patient care. |

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| | | <ul style="list-style-type: none"> • Explain the impact of communication and teamwork on surgical safety and outcomes. • Describe how fatigue and stress contribute to surgical errors and strategies to mitigate them. |
| S1-050 | Patient safety | <ul style="list-style-type: none"> • Explain the purpose and components of the WHO Surgical Safety Checklist in reducing operative risks. • Describe key infection control measures in the surgical environment. • Outline strategies to prevent retained surgical items, including counting protocols, checklists, radiopaque tools, team communication, and documentation. |
| S1-051 | Medico-legal aspects (Integrate with Forensic Medicine) | <ul style="list-style-type: none"> • Explain the concepts of negligence and malpractice in surgical practice. • Describe the importance of accurate documentation in patient care. • Discuss the principles of disclosure of medical errors to patients and families. |

VASCULAR AND NERVE DISORDERS

Theory

| Sr.No. | Topics | Specific Learning Objectives |
|--------|--------------------------------------|---|
| S1-052 | Limb ischemia (acute and chronic) | <ul style="list-style-type: none"> • Diagnose acute limb ischemia based on the signs and symptoms (6 P's) with potential complications. • Differentiate it from chronic limb ischemia. • List the differential diagnoses. • Explain the relevant investigations to confirm diagnosis. • Outline the management strategies for acute and chronic limb ischemia. • Discuss potential complications. |
| S1-053 | Gangrene | <ul style="list-style-type: none"> • Describe gangrene with pathophysiology. • Differentiate between dry, wet, and diabetic gangrene based on etiology and presentation. |

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|--------|---------------------------|---|
| | | <ul style="list-style-type: none"> • Outline investigations with management strategies. • List the potential complications and outcomes. |
| S1-054 | Varicose veins | <ul style="list-style-type: none"> • Describe the signs and symptoms of varicose veins. • Discuss potential complications and outline the management. |
| S1-055 | Venous thromboembolism | <ul style="list-style-type: none"> • Identify risk factors for deep vein thrombosis and pulmonary embolism. • Diagnose deep vein thrombosis and pulmonary embolism based on signs and symptoms. • Describe potential complications of venous thromboembolism. • Explain strategies for prevention. • Outline the emergency management. |
| S1-056 | Peripheral nerve injuries | <ul style="list-style-type: none"> • Enlist the causes of peripheral nerve injuries. • Outline the basic principles of management of peripheral nerve injuries. |

Clinical Skills

| Sr.No. | Topic | Clinical Methods/Skills |
|--------|---|---|
| S1-057 | Clinical assessment of arterial disease | <ul style="list-style-type: none"> • Palpate peripheral pulses (femoral, popliteal, dorsalis pedis, posterior tibial). • Examine varicose veins through inspection, palpation, and special tests e.g., Trendelenburg. • Perform bedside assessment of ischemia (capillary refill, temperature, Doppler signals). • Demonstrate application of compression bandaging/stockings. • Demonstrate the clinical differentiation between arterial and venous ulcers through inspection, palpation, and assessment of local signs. • Assist in wound care for gangrene and pre/post-op care. • Counsel patients/families regarding limb salvage vs. amputation. • Follow OT and ICU protocols for vascular emergencies. |

| PEDIATRIC SURGERY | | |
|-------------------|--|--|
| Theory | | |
| Sr.No. | Topics | Specific Learning Objectives |
| S1-058 | Cleft Lip | <ul style="list-style-type: none"> • Describe cleft lip with embryological basis. • Enumerate clinical features. • Outline timing of repair and treatment plan |
| S1-059 | Cleft Palate | <ul style="list-style-type: none"> • Describe cleft palate with embryological basis. • Enumerate complications of non-treatment. • Outline management principles with referral for treatment to Pediatric Surgical Setting |
| S1-060 | Clubfoot (Congenital Talipes Equinovarus) | <ul style="list-style-type: none"> • Describe the clinical features. • Outline principles of management, including conservative and surgical options • Identify possible complications and importance of long-term follow-up |
| S1-061 | Anorectal Malformation (ARM) | <ul style="list-style-type: none"> • Identify the spectrum of anorectal anomalies with embryologic basis. • Identify associated anomalies in ARM. • Describe typical presentations such as absence of anal opening and failure to pass meconium. • Discuss principles of diagnosis, need for careful perineal examination, and referral for surgical planning. |
| S1-062 | Hirschsprung's Disease | <ul style="list-style-type: none"> • Define Hirschsprung's disease as congenital aganglionosis of the bowel. • Explain pathophysiology and its functional effects leading to obstruction. • Enlist key clinical features. • Outline diagnostic investigations and treatment plan. |
| S1-063 | Umbilical hernia, Umbilical anomalies, granuloma/adenoma | <ul style="list-style-type: none"> • Differentiate umbilical hernia and granuloma /adenoma. |

| | | <ul style="list-style-type: none"> • Describe etiology and natural history. • Enumerate clinical features. • Identify indications for surgical intervention. |
|------------------------|--|--|
| S1-064 | Gastroschiasis and Omphalocele. | <ul style="list-style-type: none"> • Differentiate gastroschiasis and omphalocele with embryological origin. • Enumerate clinical features. • Identify complications of mis/non treatment. • Outline steps of resuscitation. |
| S1-065 | Intussusception and causes of intestinal obstruction in children | <ul style="list-style-type: none"> • Define intussusception. • Classify types of intussusception and pathophysiology with common age group and etiology. • Describe the classical triad of symptoms. • Outline diagnostic methods and management plan. |
| S1-066 | Infantile Hypertrophic pyloric stenosis (IHPS) | <ul style="list-style-type: none"> • Describe etiopathogenesis of infantile hypertrophic pyloric stenosis. • Describe the classical clinical features. • Identify importance and correction of metabolic abnormalities. • Outline the management plan. |
| S1-067 | Esophageal atresia and Tracheoesophageal fistula (TOF) | <ul style="list-style-type: none"> • Define esophageal atresia and tracheoesophageal fistula. • Classify types and pathophysiology of esophageal atresia. • Identify clinical features. • Outline management plan. |
| Clinical Skills | | |
| Sr.No. | Topic | Clinical Methods/Skills |
| S1-068 | Clinical skills-Pediatric Surgery | <ul style="list-style-type: none"> • Take history and perform focused clinical examination in newborns and children presenting with common pediatric surgical conditions (e.g., cleft lip |

| | | <p>and palate, umbilical anomalies, gastroschisis, omphalocele, genitourinary anomalies, hydrocephalus, spina bifida, CTEV, DDH).</p> <ul style="list-style-type: none"> • Observe/assist in OT procedures. • Identify indications for referral, counsel caregivers regarding timing of surgery, contraindications, and follow-up. |
|------------------------------|----------------------------------|---|
| UROGENITAL CONDITIONS | | |
| Theory | | |
| Sr.No. | Topics | Specific Learning Objectives |
| S1-069 | Renal calculi | <ul style="list-style-type: none"> • Identify causes and types of renal calculi. • Explain clinical features and sequelae. • Describe basic principles of diagnosis and management. |
| S1-070 | Enlarged Prostate | <p>Benign Prostatic Hyperplasia (BPH)</p> <ul style="list-style-type: none"> • Describe benign prostatic hyperplasia and its pathophysiology. • Explain its clinical features and complications. • Describe investigations and basic principles of management. <p>Prostate Cancer</p> <ul style="list-style-type: none"> • Describe prostate cancer and its risk factors. • Explain clinical features and staging of prostate cancer. • Describe investigations used in diagnosis of prostate cancer. • Discuss basic principles of management of prostate cancer. |
| S1-071 | Scrotal and Testicular Swellings | <ul style="list-style-type: none"> • Describe causes of scrotal and testicular swellings. • Explain clinical features and evaluation of scrotal and testicular swellings. |

| | | |
|--------|-----------------|---|
| | | <ul style="list-style-type: none"> Describe basic principles of management of scrotal and testicular swellings. |
| S1-072 | Bladder lesions | <ul style="list-style-type: none"> Explain common bladder lesions, including cystitis, bladder stones, and bladder tumors. Discuss the clinical presentation of bladder diseases (e.g., hematuria, dysuria, urinary frequency). Explain the principles of diagnosis, including urine analysis, imaging, and cystoscopy. Discuss basic management principles of bladder conditions, including medical and surgical approaches. Identify potential complications of bladder diseases and their management. |

Clinical Skills

| Sr.No. | Topic | Clinical Methods/Skills |
|--------|-------------------------|---|
| S1-073 | Clinical skills-Urology | <ul style="list-style-type: none"> Take focused history from patients with renal calculi, bladder lesions, enlarged prostate (BPH and prostate cancer), and scrotal/testicular swellings. Perform physical examination of the abdomen, genitourinary system, prostate (digital rectal exam), and scrotum/testes. Interpret laboratory investigations, including urinalysis, urine culture, and relevant blood tests. Interpret imaging investigations, including ultrasound, X-ray KUB, CT scan, and cystoscopy. Observe/assist in the operating theatre (OT) during urological procedures such as cystoscopy, bladder tumor resection, prostate surgery, and scrotal/testicular surgery. |



**MBBS
Final Year**

SURGERY-II

Systemic Diseases

**ACADEMIC
YEAR 2025-2026**

HEAD, FACE, AND NECK SURGERY

Theory

| Sr.No. | Topics | Specific Learning Objectives |
|--------|--------------------------|---|
| S2-001 | Head injuries | <ul style="list-style-type: none"> • Outline the principles of management of head injuries. • Enlist the common complications of head injuries. |
| S2-002 | Diseases of oral cavity | <ul style="list-style-type: none"> • Identify leukoplakia, erythroplakia, and oral lichen planus. • Outline the risk factors associated with these oral premalignant lesions. • Describe the clinical features of oral cavity malignancies. • Explain the investigations used for diagnosis and assessment. • Outline the staging systems for oral cavity cancers. • Discuss the treatment options, including surgical, radiotherapy, and multidisciplinary approaches • Discuss etiology, clinical features, investigations, and management of tongue ulcer |
| S2-003 | Salivary gland disorders | <ul style="list-style-type: none"> • Differentiate benign and malignant diseases of parotid, submandibular, sublingual glands. |
| S2-004 | Neck lumps | <ul style="list-style-type: none"> • Identify lymph node enlargements in the neck. • Differentiate common surgical causes of cervical lymphadenopathy. • Outline the principles of surgical evaluation of cervical lymph nodes. • Classify thyroid swellings. • Identify clinical features suggestive of benign and malignant thyroid disease. • Outline indications for surgical management of thyroid disorders. • Describe causes of parathyroid enlargement. • Recognize clinical features of hyperparathyroidism relevant |

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| | | <p>to surgery.</p> <ul style="list-style-type: none"> • Outline indications for surgical management of parathyroid disease. |
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Clinical Skills

| Sr.No. | Topic | Clinical Methods/Skills |
|--------|---|---|
| S2-005 | Clinical examination- Head, face, and neck | <ul style="list-style-type: none"> • Take a focused history for oral/tongue ulcers and suspicious lesions. • Examine oral cavity, lips, and palate for lesions. • Examine salivary glands through inspection, palpation, and functional tests. • Perform head and neck lymph node examination. • Perform clinical examination of thyroid gland (inspection, palpation, auscultation). • Assist in biopsy specimens' collection and ensuring proper labeling. • Counsel patients about risk factors (tobacco, alcohol, poor oral hygiene). |

BREAST SURGERY

Theory

| Sr.No. | Topics | Specific Learning Objectives |
|--------|------------------------|---|
| S2-006 | Surgical anatomy | <ul style="list-style-type: none"> • Describe surgical anatomy and lymphatic drainage of breast. |
| S2-007 | Triple assessment | <ul style="list-style-type: none"> • Describe the signs and symptoms assessed during clinical examination of the breast in suspected malignancy. • Explain the role of imaging, including ultrasound and mammography, in breast evaluation. • Discuss tissue sampling techniques such as fine-needle aspiration and core biopsy for diagnosis. |
| S2-008 | Benign breast diseases | <ul style="list-style-type: none"> • Tabulate benign breast diseases to compare clinical |

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| | | presentation, common age group, investigations, and management for fibroadenoma, breast cysts, mastitis, and gynecomastia. |
| S2-009 | Malignant breast disease | <ul style="list-style-type: none"> • Describe the clinical signs and symptoms of malignant breast disease. • Explain the staging systems used for breast cancer. • Discuss prognostic factors influencing outcomes. • Outline the treatment options, including surgical, medical, and radiotherapy approaches. • Outline indications and types of breast reconstruction. • Identify features, staging, and treatment of male breast carcinoma. |
| S2-010 | Nipple and areola diseases | <ul style="list-style-type: none"> • Identify common nipple and areola pathologies, including eczema, duct ectasia, and Paget's disease. • Describe the clinical features of these conditions. • Outline management strategies for each pathology. |

Clinical Skills

| Sr.No. | Topic | Clinical Methods/Skills |
|--------|--------------------------------|---|
| S2-011 | Clinical examination of breast | <ul style="list-style-type: none"> • Demonstrate breast examination through inspection, palpation, and lymph node exam. • Observe/assist in fine-needle aspiration cytology (FNAC) and core biopsy. • Interpret mammography and ultrasound reports under supervision. • Counsel patients regarding benign vs malignant breast conditions. • Practice communication skills for delivering sensitive information. • Follow OT protocols for breast surgery and specimen labeling. |

| THORACIC DISEASES | | |
|-------------------|--------------------------------|--|
| Theory | | |
| Sr.No. | Topics | Specific Learning Objectives |
| S2-012 | Surgical Anatomy | <ul style="list-style-type: none"> Identify critical structures to preserve during thoracic surgery, such as the phrenic and vagus nerves, recurrent laryngeal nerves, major blood vessels, and the esophagus. |
| S2-013 | Blunt and Penetrating Injuries | <ul style="list-style-type: none"> Differentiate between blunt and penetrating injuries. Outline initial assessment and stabilization. Identify common complications and their basic management. |
| S2-014 | Lung Abscess | <ul style="list-style-type: none"> Enlist common causes and risk factors of lung abscess. Describe clinical features and basic diagnostic approach. Outline principles of medical and surgical management. Identify possible complications and their prevention. |
| S2-015 | Empyema Thoracis | <ul style="list-style-type: none"> Enlist common causes and predisposing conditions of empyema. Describe clinical presentation and diagnostic methods. Outline principles of management, including drainage and supportive care. Enlist the complications. |
| S2-016 | Lung Tumors | <ul style="list-style-type: none"> Describe the clinical features, diagnostic evaluation, and general management of common benign thoracic tumors. Explain the staging, prognostic indicators, and treatment modalities for malignant thoracic tumors, including primary lung cancer and mediastinal |

| | | <p>masses.</p> <ul style="list-style-type: none"> • Outline the indications, operative techniques, and postoperative complications associated with lung-resection procedures. |
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| Clinical Skills | | |
| Sr.No. | Topic | Clinical Methods/Skills |
| S2-017 | Respiratory system examination and surgical skills | <ul style="list-style-type: none"> • Perform a structured respiratory examination, including inspection, palpation, percussion, and auscultation. • Interpret findings on chest X-rays and CT scans relevant to common thoracic conditions. • Observe/Assist in thoracocentesis and chest-drain insertion under supervision. • Observe and record key steps of bronchoscopy procedures. • Monitor post-thoracotomy care, including chest-drain function, pain control, and respiratory physiotherapy. • Counsel patients on smoking cessation and risks associated with lung cancer. • Follow ICU postoperative protocols for patients after thoracic surgery. |

GASTROINTESTINAL SURGERY

Theory

| Sr.No. | Topics | Specific Learning Objectives |
|--------|----------------------------------|---|
| S2-018 | Surgical Anatomy | <ul style="list-style-type: none"> Identify key structures that must be preserved during gastrointestinal surgery. |
| S2-019 | Esophageal obstruction | <ul style="list-style-type: none"> Enlist common benign and malignant causes of esophageal obstruction. Describe clinical features and basic diagnostic approach. Outline principles of surgical and non-surgical management Identify possible complications and basic preventive measures. Discuss causes, clinical signs, and surgical management of esophageal perforation. |
| S2-020 | Peptic Ulcers | <ul style="list-style-type: none"> Identify clinical features, diagnostic methods, complications, and treatment options. Describe the role of H. pylori in gastritis and peptic ulcer disease. |
| S2-021 | Gastric volvulus and perforation | <ul style="list-style-type: none"> Diagnose gastric volvulus through clinical signs and imaging findings. Describe the causes, presentation, and diagnosis of gastric perforation. Plan the surgical management for gastric volvulus and perforation. |
| S2-022 | Gastric tumors | <ul style="list-style-type: none"> Explain classification, staging, prognosis, and surgical management. Outline GIST, lymphomas, and benign gastric and duodenal tumors, with surgical relevance. |
| | Inflammatory bowel disease | <ul style="list-style-type: none"> Describe the anatomical involvement, pathological features, and complications of Crohn's disease |

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| S2-023 | | <p>relevant to surgery.</p> <ul style="list-style-type: none"> • Discuss the diagnostic approaches, including imaging and endoscopic findings, that guide surgical decision-making. • Outline the indications, principles, and techniques of surgical management, including resection, stricturoplasty, and management of fistulas or abscesses. |
| S2-024 | Tuberculosis | <ul style="list-style-type: none"> • Describe the clinical presentation and imaging features of intestinal tuberculosis. • Discuss surgical principles, including indications for resection or stricturoplasty. |
| S2-025 | Diverticula | <ul style="list-style-type: none"> • Differentiate congenital (Meckel's) and acquired diverticula. • List the complications. • Discuss surgical management strategies for complicated diverticula. |
| S2-026 | Intestinal Obstruction | <ul style="list-style-type: none"> • List the common causes of intestinal obstruction. • Define intussusception and volvulus. • Explain the pathophysiology of obstruction and potential progression to strangulation. • Identify key clinical features. • List the investigations required to reach the diagnosis. • Outline initial management including resuscitation, NG decompression, fluid and electrolyte replacement, and antibiotics. • Describe surgical indications. • List the complications. |
| S2-027 | Stomas | <ul style="list-style-type: none"> • Describe types of stomas (ileostomy, jejunostomy) and indications. • List common complications and principles of stoma care. |

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| S2-028 | Fistulas | <ul style="list-style-type: none"> Identify causes and clinical presentation of enterocutaneous fistulas. Discuss diagnostic approaches and surgical management principles. |
| S2-029 | Short Bowel Syndrome | <ul style="list-style-type: none"> Describe etiologies and nutritional consequences of short bowel syndrome. Outline medical, nutritional, and surgical management strategies. |
| S2-030 | Small Intestinal Tumors | <ul style="list-style-type: none"> Differentiate benign (adenomas, lipomas) from malignant (adenocarcinoma, lymphoma, sarcoma) small intestine tumors. Discuss diagnostic workup and surgical management plan. |
| S2-031 | Ulcerative colitis | <ul style="list-style-type: none"> Describe pathological features, extent of disease, and mucosal involvement. Describe clinical features, complications (toxic megacolon, bleeding), and indications for surgery. Outline the management plan including surgical options, including colectomy and ileal pouch-anal anastomosis. |
| S2-032 | Vascular lesions | <ul style="list-style-type: none"> Diagnose angiodysplasia and ischemic colitis clinically and on imaging. Discuss plan of surgical and endoscopic management. |
| S2-033 | Large Intestine Tumors | <ul style="list-style-type: none"> Differentiate benign polyps/adenomas from malignant adenocarcinoma. Discuss staging, prognosis, and surgical management options. |
| S2-034 | Acute and chronic Appendicitis | <ul style="list-style-type: none"> Identify classical signs of acute appendicitis. Describe atypical presentations. Differentiate acute from chronic appendicitis based on symptom duration, severity, and presentation. |

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| | | <ul style="list-style-type: none"> • Outline differential diagnoses including mesenteric adenitis, Meckel's diverticulitis, gynecological, and urinary conditions. • List the investigations to reach diagnosis. • Identify complications of appendicitis. |
| S2-035 | Appendix Tumors | <ul style="list-style-type: none"> • Differentiate benign (mucinous cystadenoma) and malignant (carcinoid, adenocarcinoma) tumors. • Describe surgical approaches and extent of resection based on tumor type and size. |
| S2-036 | Appendectomy | <ul style="list-style-type: none"> • Outline indications for appendectomy in acute and chronic appendicitis. • Describe the steps of open and laparoscopic appendectomy. • List post-operative complications. |
| S2-037 | Hemorrhoids | <ul style="list-style-type: none"> • Explain pathophysiology and classification. • Diagnose hemorrhoids based on clinical features, complications, and indications for surgery. • Outline the management plan. |
| S2-038 | Anal Fissure | <ul style="list-style-type: none"> • Differentiate acute and chronic fissures. • Discuss conservative and surgical treatment (lateral internal sphincterotomy). • List complications and describe preventive strategies. |
| S2-039 | Fistula-in-Ano | <ul style="list-style-type: none"> • Describe etiology and common classification (Park's classification). • Outline surgical plan including fistulotomy, seton placement, and sphincter preservation. |
| S2-040 | Pilonidal Sinus | <ul style="list-style-type: none"> • Describe the clinical features and differentiate from sebaceous cyst, gluteal/perianal abscess, dermoid cyst. • List common complications. • Describe surgical management. |
| S2-041 | Anal Canal Tumors | <ul style="list-style-type: none"> • Differentiate benign (papilloma, adenoma) and |

| | | <p>malignant tumors (squamous cell carcinoma, adenocarcinoma).</p> <ul style="list-style-type: none"> • Discuss staging, prognosis, and surgical or oncological management options. |
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| Clinical Skills | | |
| Sr.No. | Topic | Clinical Methods/Skills |
| S2-042 | Small Intestine | <ul style="list-style-type: none"> • Take detailed history for dyspepsia, hematemesis, and melaena. • Perform clinical examination for anemia, abdominal mass, and peritonitis. • Perform focused abdominal examination to assess obstruction, masses, and tenderness • Observe/assist in inserting nasogastric tube. • Counsel patients on H. pylori eradication therapy and lifestyle modifications. • Interpret imaging studies (X-ray, CT, enteroclysis) for small bowel obstruction and other small intestine lesions. • Observe/assist in biopsy procedures and ensure proper specimen handling and labeling. • Follow ICU and OT protocols in the management of small bowel emergencies. |
| S2-043 | Large Intestine | <ul style="list-style-type: none"> • Take focused history for altered bowel habits, rectal bleeding, and abdominal pain. • Demonstrate thorough abdominal and per rectal examination, including digital rectal exam. • Interpret colonoscopy and barium enema findings. • Observe/assist in colonoscopy or biopsy procedures and ensure proper specimen labeling. • Assist in providing pre- and post-operative care for patients undergoing colectomy or other colorectal surgeries. |

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| | | <ul style="list-style-type: none"> • Counsel patients regarding IBD management, colorectal cancer, and lifestyle modifications. • Follow OT protocols for bowel preparation, sterile technique, and specimen handling |
| S2-044 | Intestinal Obstruction | <ul style="list-style-type: none"> • Take focused history for bowel obstruction, including abdominal pain, vomiting, and constipation. • Perform abdominal examination to assess distension, peristaltic activity, and tenderness. • Interpret imaging studies, including X-rays, for air- fluid levels and obstruction patterns. • Observe/assist in NG tube insertion for decompression and monitor its effectiveness. • Assist in initiating IV fluid resuscitation and monitor electrolytes and hemodynamic status. • Observe/assist in laparotomy or other surgical interventions for intestinal obstruction. • Counsel patients and attendants regarding the risks and postoperative expectations of emergency surgery. • Follow ICU protocols for postoperative care, monitoring for complications, and early recognition of recurrence. |
| S2-045 | Appendicitis | <ul style="list-style-type: none"> • Take focused history for acute abdominal pain suggestive of appendicitis. • Perform McBurney's point tenderness, Rovsing's sign, and Psoas sign. • Interpret imaging findings from ultrasound and CT to confirm diagnosis. • Observe/assist in open and laparoscopic appendectomy, ensuring safe operative technique. • Assist in post-operative care, including wound care and drain monitoring. |

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| | | <ul style="list-style-type: none"> • Counsel patients regarding the procedure, post-operative recovery, and follow-up. • Follow OT protocols and ensure proper specimen handling and labeling. |
| S2-046 | Anal canal | <ul style="list-style-type: none"> • Take history for rectal pain, bleeding, discharge, or perianal swelling. • Perform clinical examination, including inspection, digital rectal exam, and proctoscopy. • Observe/assist in procedures such as hemorrhoid banding, sclerotherapy, and surgical hemorrhoidectomy. • Observe/assist in fistula-in-ano and pilonidal sinus surgeries, ensuring safe operative technique. • Assist in providing post-operative care, including wound care, dressing changes, and monitoring for complications. • Counsel patients on hygiene, diet, and long-term follow-up to prevent recurrence. • Ensure proper handling and labeling of surgical specimens for biopsy. |

HERNIA

Theory

| Sr.No. | Topics | Specific Learning Objectives |
|--------|------------------|--|
| S2-047 | Hernia formation | <ul style="list-style-type: none"> • Explain the mechanical and biological processes that weaken the abdominal wall and lead to hernia formation. • Describe the rectus sheath, linea alba, inguinal canal, and weak areas important in hernia formation and repair. |
| S2-048 | Inguinal hernia | <ul style="list-style-type: none"> • Identify the clinical signs and symptoms of inguinal hernia. |

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| | | <ul style="list-style-type: none"> • Differentiate between direct and indirect inguinal hernias. • Explain possible complications. • Describe surgical and non-surgical management. |
| S2-049 | Femoral hernia | <ul style="list-style-type: none"> • Identify the clinical features of femoral hernia. • Explain the risks and potential complications associated with femoral hernia. • Describe the principles of surgical and non-surgical management. |
| S2-050 | Ventral hernias | <ul style="list-style-type: none"> • Identify types of ventral hernias. • Describe the clinical features of each type of ventral hernia (umbilical, incisional, parastomal, and traumatic hernias). • Explain the risks and potential complications associated with ventral hernias. • Outline the principles of surgical management for ventral hernias. |
| S2-051 | Peritonitis | <ul style="list-style-type: none"> • Enlist the etiology of peritonitis. • Outline the clinical features and diagnostic evaluation, including laboratory tests and imaging. • Outline the surgical and supportive management plan in acute peritonitis. • Discuss the prognosis and factors influencing patient outcomes in peritonitis. • Identify the major complications associated with untreated or severe peritonitis. |
| S2-052 | Intraperitoneal abscess | <ul style="list-style-type: none"> • Describe the clinical presentation and common sites of intraperitoneal abscesses. • Describe the diagnostic role of laboratory tests and imaging modalities. • Explain the procedure of abscess drainage, including percutaneous and surgical approaches. |

| S2-053 | Adhesions & torsion | <ul style="list-style-type: none"> • Explain the pathophysiology of intra-abdominal adhesions and torsion. • Describe the clinical presentation and complications associated with adhesions and torsion. • Plan the surgical management for adhesions and torsion. |
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| Clinical Skills | | |
| Sr.No. | Topic | Clinical Methods/Skills |
| S2-054 | Clinical examination of hernia | <ul style="list-style-type: none"> • Perform clinical examination of the abdominal wall and common hernia sites. • Examine groin of a patient to distinguish inguinal from femoral hernias through inspection, palpation, cough impulse, deep ring and femoral canal palpation, Valsalva maneuver, and assessment of reducibility. • Identify the signs of obstruction and strangulation during patient assessment. • Assist in open and laparoscopic hernia repair procedures. • Observe and assist in handling and fixing surgical mesh safely. • Counsel patients regarding elective versus emergency hernia surgery. • Follow operating theatre protocols, including proper handling of specimens from strangulated bowel. |
| S2-055 | Peritonitis | <ul style="list-style-type: none"> • Perform abdominal examination for guarding, rigidity, ascites, masses. • Observe/assist in ascitic tap. • s in post-op care for peritonitis and septic patients in ICU. |

PANCREAS

Theory

| Sr.No. | Topics | Specific Learning Objectives |
|--------|-------------------------------------|--|
| S2-056 | Pancreatitis (acute and chronic) | <ul style="list-style-type: none"> Identify the major etiological factors contributing to pancreatitis. Explain the pathophysiological mechanisms leading to pancreatic inflammation. Identify the key clinical features and diagnostic criteria of pancreatitis. Outline essential investigations used to confirm diagnosis and assess severity. Discuss potential complications and their clinical implications. Plan medical and supportive management. |
| S2-057 | Pancreatic cancer | <ul style="list-style-type: none"> Identify the major risk factors associated with pancreatic cancer. Describe its clinical presentation. Discuss the factors influencing prognosis in pancreatic cancer. Outline the main treatment modalities, including surgical, medical, and palliative options. Identify important neighbouring structures at surgical risk during pancreatic procedures. |

Clinical Skills

| Sr.No. | Topic | Clinical Methods/Skills |
|--------|-------------------------------------|--|
| S2-058 | Clinical skills-pancreatic diseases | <ul style="list-style-type: none"> Perform focused history-taking for abdominal pain, jaundice, and weight loss. Conduct abdominal examination to assess epigastric tenderness, masses, and ascites. Interpret CT and USG findings related to pancreatitis |

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| | | <p>and pancreatic tumors.</p> <ul style="list-style-type: none"> • Observe/assist in biopsy procedures and ensure accurate specimen labeling. • Manage the initial care of acute pancreatitis, including fluids, analgesia, and monitoring. • Assist in providing post-operative care for pancreatic surgery patients, with emphasis on drain monitoring and nutritional support. • Counsel patients regarding lifestyle modifications such as alcohol and smoking cessation in chronic pancreatitis. |
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SPLEEN

Theory

| Sr.No. | Topics | Specific Learning Objectives |
|--------|------------------------------|--|
| S2-059 | Splenic trauma & rupture | <ul style="list-style-type: none"> • Identify the common mechanisms of splenic injury. • Identify the clinical features and complications associated with splenic trauma. • Outline investigations for diagnosis and assessment of splenic injury. • Describe the surgical and non-surgical management of splenic rupture. |
| S2-060 | Splenomegaly & hypersplenism | <ul style="list-style-type: none"> • Identify the common causes and systemic effects of splenomegaly and hypersplenism. • Outline the appropriate investigations for diagnosis and assessment. |
| S2-061 | Neoplasms | <ul style="list-style-type: none"> • Differentiate between benign and malignant tumors of the spleen based on clinical and pathological features. • Recognize the key diagnostic approaches, including imaging and laboratory evaluation. • Discuss the principles of management for splenic |

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| | | neoplasms, including surgical options. |
| S2-062 | Splenectomy | <ul style="list-style-type: none"> List the common indications for splenectomy. Identify the major structures at risk during splenic surgery. Describe the surgical procedure and important operative considerations. List the potential complications. Describe overwhelming post-splenectomy infection (OPSI). Outline preventive measures. |

Clinical Skills

| Sr.No. | Topic | Clinical Methods/Skills |
|--------|----------------------------------|--|
| S2-063 | Clinical skills-splenic diseases | <ul style="list-style-type: none"> Perform abdominal examination for splenomegaly. Interpret USG and CT findings for splenic trauma, enlargement, or pathology. Assist in providing initial care of splenic trauma. Observe/assist in splenectomy and ensure proper specimen handling and labeling. Counsel patients on appropriate vaccinations and preventive care post-splenectomy. Follow ICU and OT protocols in the management of splenic emergencies. |

GALLBLADDER AND BILE DUCTS

Theory

| Sr.No. | Topics | Specific Learning Objectives |
|--------|----------------|---|
| S2-064 | Cholelithiasis | <ul style="list-style-type: none"> Identify major risk factors contributing to gallstone development. Describe the common complications, including cholecystitis and choledocholithiasis. |

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| S2-065 | Acute and chronic cholecystitis | <ul style="list-style-type: none"> • List common causes and risk factors of cholecystitis • Describe clinical features and basic diagnostic evaluation • Outline principles of medical and surgical management, including cholecystectomy • Identify potential complications and basic preventive measures |
| S2-066 | Cholecystectomy | <ul style="list-style-type: none"> • Identify the indications for cholecystectomy. • Describe the surgical anatomy relevant to cholecystectomy, including Calot's triangle and variations of the cystic duct and artery. • Outline the steps of open and laparoscopic cholecystectomy. • List intraoperative and postoperative complications. • Identify key structures to preserve during cholecystectomy. |
| S2-067 | Tumors of biliary tree | <ul style="list-style-type: none"> • Differentiate between benign and malignant tumors of the biliary tree based on clinical and pathological features. • Describe the staging systems and their relevance to prognosis and treatment planning. • Discuss the principles of management, including surgical resection and palliative options. |

Clinical Skills

| Sr.No. | Topic | Clinical Methods/Skills |
|--------|---|--|
| S2-068 | Clinical Skills - Gallbladder and Bile Duct Surgery | <ul style="list-style-type: none"> • Take focused history for biliary colic, jaundice, pruritus, and weight loss. • Perform abdominal examination to assess gallbladder disease and signs of obstructive jaundice. • Interpret imaging findings from USG, MRCP, and ERCP for biliary pathology. • Observe/assist in laparoscopic cholecystectomy and |

| | | <p>ensure proper specimen handling.</p> <ul style="list-style-type: none"> • Assist in providing initial management for post-cholecystectomy complications. • Counsel patients regarding gallstone prevention, lifestyle modifications, and risks of malignancy. • Follow OT and ICU protocols during management of obstructive jaundice and biliary surgery. |
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| LIVER | | |
| Theory | | |
| Sr.No. | Topics | Specific Learning Objectives |
| S2-069 | Liver Trauma | <ul style="list-style-type: none"> • Enlist common causes and types of liver injury. • Describe clinical features and initial assessment (including hemodynamic status). • Outline principles of management, including conservative and surgical approaches. • Identify possible complications and basic preventive measures. |
| S2-070 | Obstructive jaundice | <ul style="list-style-type: none"> • Diagnose obstructive jaundice based on clinical presentation and investigations. • List the investigations (LFTs, USG, MRCP, and ERCP) in diagnosis and evaluation. • Outline the management plan. |
| S2-071 | Liver abscess | <ul style="list-style-type: none"> • Differentiate amoebic and pyogenic liver abscesses. • List the investigations to reach the diagnosis. • Outline the management plan. |
| S2-072 | Hydatid disease | <ul style="list-style-type: none"> • Explain the life cycle, clinical features, imaging findings, and surgical management of hydatid secondary disease. |

| S2-073 | Liver malignancies | <ul style="list-style-type: none"> • Describe clinical features and basic diagnostic evaluation, including imaging and tumor markers. • Outline principles of surgical and non-surgical management • Identify potential complications and basic preventive measures |
|------------------------|----------------------------|---|
| S2-074 | Management principles | <ul style="list-style-type: none"> • Discuss the role of investigations such as LFTs, USG, CT, MRI, and tumor markers (AFP) in liver pathology. • Outline management principles, including indications for surgery, drainage, resection, and palliative care. |
| Clinical Skills | | |
| Sr.No. | Topic | Clinical Methods/Skills |
| S2-075 | Clinical examination-liver | <ul style="list-style-type: none"> • Take focused history for fever, jaundice, abdominal pain, and weight loss. • Perform abdominal examination to assess hepatomegaly, tenderness, and palpable masses. • Interpret imaging findings from USG and CT for liver abscesses, hydatid cysts, and tumors. • Observe/assist in percutaneous drainage of liver abscesses. • Observe/assist in surgical procedures for hydatid cyst removal and liver resection. • Counsel patients regarding prevention of hydatid disease and lifestyle modifications in liver malignancy. • Follow OT and ICU protocols for safe perioperative care in liver surgery. |

ORTHOPEDIC AND TRAUMA

Theory

| Sr.No. | Topics | Specific Learning Objectives |
|--------|-------------------------------------|---|
| S2-076 | Bone Fractures and Complications | <ul style="list-style-type: none"> • Describe the types and classification of bone fractures. • Explain the pathophysiology and healing of fractures. • Discuss the clinical features, diagnosis, and complications of fractures. • Explain basic principles of fracture management, including conservative and surgical approaches. |
| S2-077 | Injuries of Tendons and Bursae | <ul style="list-style-type: none"> • Describe common tendon and bursal injuries. • Explain their clinical presentation and evaluation. • Discuss principles of management, including conservative and surgical treatment. |
| S2-078 | Arthritis | <ul style="list-style-type: none"> • Describe the types of arthritis affecting joints. • Explain clinical features, basic investigations, and radiological findings. • Discuss principles of medical and surgical management of arthritis. |
| S2-079 | Spinal Trauma Spinal Deformities | <ul style="list-style-type: none"> • Describe types and mechanisms of spinal injuries. • Explain clinical features and neurological assessment. • Discuss imaging modalities used in spinal trauma. • Explain basic principles of management, including immobilization and surgery. • Describe common spinal deformities (scoliosis, kyphosis, lordosis). • Explain their clinical assessment and radiological evaluation. • Discuss management options, including conservative and surgical approaches. |

| S2-080 | Bone and Cartilage Tumors Spinal Tumors | <ul style="list-style-type: none"> • Classify bone and cartilage tumors into benign and malignant. • Describe clinical features and basic diagnostic approach. • Discuss general principles of management and complications of bone and cartilage tumors. • Classify spinal tumors. • Describe clinical presentation and neurological signs. • Explain diagnostic approach, including imaging. • Discuss principles of management and potential complications. |
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| S2-081 | Medico legal aspects of trauma | See annexure-II (Forensic Medicine) |
| Clinical Skills | | |
| Sr.No. | Topic | Clinical Methods/Skills |
| S2-082 | Clinical skills-Orthopedics and trauma | <ul style="list-style-type: none"> • Take focused history from patients with bone fractures, tendon/bursa injuries, arthritis, bone/cartilage tumors, spinal trauma, spinal tumors, and spinal deformities. • Perform clinical examination, including inspection, palpation, range of motion, neurovascular assessment, and special tests for joints, bones, and spine. • Interpret X-rays of fractures, joint diseases, bone/cartilage tumors, and spinal deformities. |

SURGICAL INSTRUMENTS

Cutting Instruments

- Scalpel handle with #10 blade
- Metzenbaum scissors
- Mayo scissors (curved/straight)

Tissue Handling / Grasping

- Adson forceps (with teeth)
- Debaquey forceps
- Allis forceps
- Babcock forceps
- Kocher (Ochsner) forceps

Hemostatic / Clamping Instruments

- Mosquito forceps
- Kelly forceps
- Crile forceps
- Rochester-Pean forceps

Needle Holders / Suturing

- Mayo-Hegar needle holder
- Olsen-Hegar needle holder

Retractors

- Senn retractor
- Army-Navy retractor
- Richardson retractor

Suction / Irrigation

- Yankauer suction tip
- Poole suction tip

Other Essentials

- Towel clips
- Sponge holding forceps

Suture Needles

- Curved needle

- Straight needle

Common Sutures

- Absorbable: Vicryl, Dexon, Chromic catgut
- Non-absorbable: Nylon, Prolene, Silk

ANNEXURE-I

Transfusion Medicine for Undergraduate MBBS Students

Learning Objectives

By the end of the Rotation, the student will be able to:

1. Explain the principles of transfusion medicine, including types, indications, contraindications, and dosing of major blood components used in surgical practice.
2. Describe pre-transfusion requirements and safe transfusion procedures, including ABO/Rh typing, cross-match principles, consent, documentation, and perioperative transfusion protocols.
3. Classify transfusion reactions and explain their pathophysiology, covering acute and delayed reactions, clinical features, transfusion- transmissible infections, and preventive strategies.
4. Interpret laboratory data related to transfusion practice, including blood grouping reports, cross-match results, transfusion reaction work-up (DAT, LDH, bilirubin, coagulation profile), and outline evidence-based management steps.
5. Investigate and Recommend Corrective and Preventive Action of Transfusion Reactions

B. Psychomotor (Skills) Domain

By the end of the training, the student will be able to:

1. Perform correct bedside verification, including patient identity, blood unit details, and setting up equipment for safe administration of blood components.

2. Set up and administer blood transfusions safely, applying proper technique, aseptic measures, appropriate infusion rates, and completing necessary transfusion documentation.
3. Monitor patients during transfusion, accurately recording vital signs, identifying early signs of transfusion reactions, and collecting required samples for laboratory evaluation.
4. Interpret basic transfusion-related laboratory findings during clinical care, including recognizing incompatible blood group results, abnormal DAT, hemolysis markers, transfusion reaction reports (at least 5) and initiate appropriate first response actions (stop transfusion, maintain IV line, call senior, return samples/unit to blood bank).

Reference Material:

1. The administration of blood components: a British Society for Haematology Guideline
2. Guideline on the investigation and management of acute transfusion reactions, British Journal of Haematology 2023

TRANSFUSION MEDICINE ROTATION LOGBOOK

For Undergraduate MBBS – General Surgery Rotation

1. Student Information

| Field | Details |
|-------------|-----------------|
| Name | |
| Roll Number | |
| College | |
| Rotation | General Surgery |
| Duration | ___ weeks |

| Field | Details |
|------------|--------------------------------------|
| Supervisor | Prof. _____ |
| Department | General Surgery / Blood Bank Liaison |

2. Record of Performed Skills

A. Blood Grouping & Cross-Match Interpretation (Cognitive + Skill)

| Task | Date | Attempt (O/S/D)* | Faculty Feedback | Signature |
|---|------|---------------------|---------------------|-----------|
| Interpret ABO/Rh typing report | | | | |
| Identify incompatible cross-match results | | | | |
| Interpret DAT, bilirubin, LDH, hemolysis indicators | | | | |
| Documentation of transfusion reaction work-up form | | | | |

O = Observed, S = Performed under Supervision, D = Demonstrated independently

B. Pre-Transfusion Verification & Preparation

| Skill | Date | Attempt (O/S/D) | Remarks | Faculty Signature |
|---|------|--------------------|---------|----------------------|
| Verified patient identity using 2 identifiers | | | | |
| Matched blood unit details with request form | | | | |

| Skill | Date | Attempt (O/S/D) | Remarks | Faculty Signature |
|---|------|--------------------|---------|----------------------|
| Checked expiry date & compatibility label | | | | |
| Prepared infusion set with filter aseptically | | | | |

C. Administration of Blood Components

| Skill | Date | Attempt (O/S/D) | Remarks | Signature |
|--|------|--------------------|---------|-----------|
| Set up transfusion with correct IV access | | | | |
| Adjusted infusion rate according to protocol | | | | |
| Completed consent and transfusion record | | | | |
| Completed post-transfusion documentation | | | | |

D. Monitoring & Early Detection of Reactions

| Skill | Date | Attempt (O/S/D) | Feedback | Signature |
|---|------|--------------------|----------|-----------|
| Recorded baseline/15-min vitals accurately | | | | |
| Identified early signs of transfusion reaction | | | | |
| Responded appropriately (stop transfusion, maintain IV line, call senior) | | | | |
| Collected blood bag, tubing & samples for reaction workup | | | | |

E. Management of Transfusion Reactions

| Task | Date | Attempt (O/S/D) | Remarks | Signature |
|--|------|--------------------|---------|-----------|
| Recognized type of reaction (FNHTR, Allergic, AHTR, TRALI, TACO, Sepsis) | | | | |
| Interpreted reaction investigation report | | | | |
| Completed documentation: transfusion reaction form | | | | |

3. Mini-CEX / DOPS (Workplace-Based Assessment)

3. DOPS - Blood Transfusion Setup

| Criteria | Rating (1–5) |
|-------------------------------|--------------|
| Patient identity verification | |
| Equipment preparation | |
| Aseptic technique | |
| Infusion setup | |
| Documentation | |
| Global rating | |

Faculty Comments:
Signature & Stamp: _____

B. Mini-CEX - Management of Transfusion Reaction

| Domain | Rating (1–9) |
|--------------------------------------|--------------|
| History-taking / symptom recognition | |
| Clinical judgment | |
| Interpretation of lab results | |

| Domain | Rating (1-9) |
|---|--------------|
| Emergency response steps | |
| Communication with senior staff & patient | |
| Professionalism | |
| Overall competence | |

Feedback:

Faculty: _____

Signature: _____

4. Final Supervisor Evaluation

| Attribute | Rating |
|-----------------------|---|
| Knowledge | Excellent / Good / Satisfactory / Needs Improvement |
| Skills | Excellent / Good / Satisfactory / Needs Improvement |
| Professional attitude | Excellent / Good / Satisfactory / Needs Improvement |
| Logbook completeness | Complete / Incomplete |

Supervisor Comments:

Signature & Stamp: _____

ANNEXURE-II

(Medico legal aspect of Trauma-Forensic Medicine)

- Describe the identification process of patient with history of trauma: CNIC, thumb impression, photograph, identification marks.
- Take consent considering the points:
 1. Type of consent (written, informed consent): in case of adult (self), in case of minor/insane, in case of custody, implied consent in case of emergency.
- Describe the process of recording dying declaration:

Who will record?

 1. Duty doctor
 2. In the presence of two credible persons.
 3. Video recording of statement.
 4. It will be read to the patient and get signature (if possible).
 5. Seal the statement bearing signatures of the person recording it.
 6. Send this to Elaqa magistrate.
- Describe the detailed procedure of examination.
 1. GCS
 2. Conditions of clothes (cut, hole, tears, derangement, stains)
- Elaborate the local examination of injury:

Site of the injury, location of the injury (distance form 2 anatomical points), type of injury (blunt, sharp, firearm, burn), size, color, age of injury, mobility, underlying bone exposed/not, deformity.
- Formulate opinion regarding injuries as per Qisas and Diyat act .Head and face (Shajjah), limbs (JGJ), cavities (JG/JGJ), Other neck injuries, burn.
- Manner: homicidal, suicidal, accidental
- Fabrication yes or no
- Weapon
- Condition of wound

Table of specifications (ToS)

FINAL YEAR MBBS

| MEDICINE CLERKSHIP | | | | | | |
|-----------------------------------|-----------|-----------|-------------------------------------|-------------------------------------|-----------|-------------|
| Theory | | | Clinical skills | | | Total Marks |
| Paper 1 MCQs | 100 Marks | 200 Marks | OSCE | 10 stations x 5 marks= 50 marks | 200 Marks | 400 Marks |
| | | | OSVE | 02 Stations x 10 marks= 20 marks | | |
| Paper 2 MCQs | 100 Marks | | Short case | 02 Short case x 30 marks = 60 marks | | |
| | | | Long case | 01 Long case x 70 marks = 70 marks | | |
| Internal assessment (10%) Theory | | 50 marks | Internal assessment (10%) Practical | | 50 marks | 100 Marks |
| Total=500 Marks | | | | | | |
| SURGERY CLERKSHIP | | | | | | |
| Theory | | | Clinical skills | | | Total Marks |
| Paper 1 MCQs | 100 Marks | 200 Marks | OSCE | 10 stations x 5 marks= 50 marks | 200 Marks | 400 Marks |
| | | | OSVE | 02 Stations x 10 marks= 20 marks | | |
| Paper 2 MCQs | 100 Marks | | Short case | 02 Short case x 30 marks = 60 marks | | |
| | | | Long case | 1 Long case x 70 marks = 70 marks | | |
| Internal assessment (10%) Theory | | 50 marks | Internal assessment (10%) Practical | | 50 marks | 100 Marks |
| Total=500 Marks | | | | | | |
| OBSTETRIC & GYNAECOLOGY CLERKSHIP | | | | | | |
| Theory | | | Clinical skills | | | Total Marks |
| Obstetrics MCQs | 60 Marks | 120 | OSCE | 08 stations x 5 marks= 40 marks | 120 Marks | 240 Marks |
| | | | OSVE | 02 Stations x 10 marks= 20 marks | | |

| | | | | | | |
|----------------------------------|----------|-------------------------------------|-------------------------------------|------------------------------------|----------|--------------------|
| Gynaecology MCQs | 60 Marks | Marks | Short case | 2 Short case x 15 marks = 30 marks | | |
| | | | Long case | 1 Long case x 30 marks = 30 marks | | |
| Internal assessment (10%) Theory | | 30 marks | Internal assessment (10%) Practical | | 30 marks | 60 Marks |
| Total=300 Marks | | | | | | |
| PAEDIATRICS CLERKSHIP | | | | | | |
| Theory | | | Clinical skills | | | Total Marks |
| MCQs (80) | 80 Marks | OSCE | 08 stations x 5 marks= 40 marks | | 80 Marks | 160 Marks |
| | | OSVE | 02 Stations x 5 marks= 10 marks | | | |
| | | Short case | 1 Short case x 10 marks = 10 marks | | | |
| | | Long case | 1 Long case x 20 marks = 20 marks | | | |
| Internal assessment (10%) Theory | 20 Marks | Internal assessment (10%) Practical | | | 20 Marks | 40 Marks |
| Total=200 Marks | | | | | | |
| GRAND TOTAL=1500 Marks | | | | | | |

INTERNAL ASSESSMENT

It shall constitute 20% of the total assessment at the end of the academic year.

| | Scoring Parameter | Weightage (percentage) |
|---------------------------|-----------------------|---|
| Theory 10 % | Attendance | 75% attendance -1 % >85% attendance -2 % |
| | Block Exam | 5 % |
| | Continuous assessment | 3 % |
| Practical 10 % | Attendance | 75% attendance -1 % >85% attendance -2 % |
| | Block Exam | 5 % |
| | Clinical logbooks | 3 % |

***Remedial / Re-sit Exam Policy**

